

Appl. No. : 09/931,836  
Filed : August 16, 2001

**AMENDMENTS TO THE CLAIMS**

1. (Cancelled) Isolated nucleic acid having at least 80% nucleic acid sequence identity to a nucleotide sequence that encodes an amino acid sequence selected from the group consisting of the amino acid sequence shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) and Figure 46 (SEQ ID NO:80).

2. (Cancelled) Isolated nucleic acid having at least 80% nucleic acid sequence identity to a nucleotide sequence selected from the group consisting of the nucleotide sequence shown in Figure 1 (SEQ ID NO:1), Figure 3 (SEQ ID NO:8), Figure 5 (SEQ ID NO:10), Figure 7 (SEQ ID NO:15), Figure 9 (SEQ ID NO:17), Figure 11 (SEQ ID NO:22), Figure 13 (SEQ ID NO:28), Figure 15 (SEQ ID NO:34), Figure 17 (SEQ ID NO:39), Figure 19 (SEQ ID NO:44), Figure 21 (SEQ ID NO:49), Figure 23 (SEQ ID NO:51), Figure 25 (SEQ ID NO:56), Figure 27 (SEQ ID NO:58), Figure 29 (SEQ ID NO:60), Figure 31 (SEQ ID NO:62), Figure 33 (SEQ ID NO:64), Figure 35 (SEQ ID NO:66), Figure 37 (SEQ ID NO:71), Figure 39 (SEQ ID NO:73), Figure 41 (SEQ ID NO:75), Figure 43 (SEQ ID NO:77) and Figure 45 (SEQ ID NO:79).

3. (Cancelled) Isolated nucleic acid having at least 80% nucleic acid sequence identity to a nucleotide sequence selected from the group consisting of the full-length coding sequence of the nucleotide sequence shown in Figure 1 (SEQ ID NO:1), Figure 3 (SEQ ID NO:8), Figure 5 (SEQ ID NO:10), Figure 7 (SEQ ID NO:15), Figure 9 (SEQ ID NO:17), Figure 11 (SEQ ID NO:22), Figure 13 (SEQ ID NO:28), Figure 15 (SEQ ID NO:34), Figure 17 (SEQ ID NO:39), Figure 19 (SEQ ID NO:44), Figure 21 (SEQ ID NO:49), Figure 23 (SEQ ID NO:51), Figure 25 (SEQ ID NO:56), Figure 27 (SEQ ID NO:58), Figure 29 (SEQ ID NO:60), Figure 31 (SEQ ID NO:62), Figure 33 (SEQ ID NO:64), Figure 35 (SEQ ID NO:66), Figure 37 (SEQ ID NO:71), Figure 39 (SEQ ID NO:73), Figure 41 (SEQ ID NO:75), Figure 43 (SEQ ID NO:77) and Figure 45 (SEQ ID NO:79).

Appl. No. : 09/931,836  
Filed : August 16, 2001

4. (Cancelled) Isolated nucleic acid having at least 80% nucleic acid sequence identity to the full-length coding sequence of the DNA deposited under any ATCC accession number shown in Table 7.

5. (Cancelled) A vector comprising the nucleic acid of any one of Claims 1 to 4.

6. (Cancelled) The vector of Claim 5 operably linked to control sequences recognized by a host cell transformed with the vector.

7. (Cancelled) A host cell comprising the vector of Claim 5.

8. (Cancelled) The host cell of Claim 7, wherein said cell is a CHO cell.

9. (Cancelled) The host cell of Claim 7, wherein said cell is an *E. coli*.

10. (Cancelled) The host cell of Claim 7, wherein said cell is a yeast cell.

11. (Cancelled) A process for producing a PRO polypeptides comprising culturing the host cell of Claim 7 under conditions suitable for expression of said PRO polypeptide and recovering said PRO polypeptide from the cell culture.

12. (Cancelled) An isolated polypeptide having at least 80% amino acid sequence identity to an amino acid sequence selected from the group consisting of the amino acid sequence shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) and Figure 46 (SEQ ID NO:80).

13. (Cancelled) An isolated polypeptide scoring at least 80% positives when compared to an amino acid sequence selected from the group consisting of the amino acid sequence shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40

**Appl. No.** : 09/931,836  
**Filed** : August 16, 2001

(SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) and Figure 46 (SEQ ID NO:80).

14. (Cancelled) An isolated polypeptide having at least 80% amino acid sequence identity to an amino acid sequence encoded by the full-length coding sequence of the DNA deposited under any ATCC accession number shown in Table 7.

15. (Cancelled) A chimeric molecule comprising a polypeptide according to any one of Claims 12 to 14 fused to a heterologous amino acid sequence.

16. (Cancelled) The chimeric molecule of Claim 15, wherein said heterologous amino acid sequence is an epitope tag sequence.

17. (Cancelled) The chimeric molecule of Claim 15, wherein said heterologous amino acid sequence is a Fc region of an immunoglobulin.

18. (Cancelled) An antibody which specifically binds to a polypeptide according to any one of Claims 12 to 14.

19. (Cancelled) The antibody of Claim 18, wherein said antibody is a monoclonal antibody, a humanized antibody or a single-chain antibody.

20. (Cancelled) Isolated nucleic acid having at least 80% nucleic acid sequence identity to:

(a) a nucleotide sequence encoding the polypeptide shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) or Figure 46 (SEQ ID NO:80), lacking its associated signal peptide;

(b) a nucleotide sequence encoding an extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52),

Appl. No. : 09/931,836  
Filed : August 16, 2001

Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) or Figure 46 (SEQ ID NO:80), with its associated signal peptide; or

(c) a nucleotide sequence encoding an extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) or Figure 46 (SEQ ID NO:80), lacking its associated signal peptide.

21. (Cancelled) An isolated polypeptide having at least 80% amino acid sequence identity to:

(a) the polypeptide shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) or Figure 46 (SEQ ID NO:80), lacking its associated signal peptide;

(b) an extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57),

Appl. No. : 09/931,836  
Filed : August 16, 2001

Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63),  
Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72),  
Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) or  
Figure 46 (SEQ ID NO:80), with its associated signal peptide; or

(c) an extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), Figure 4 (SEQ ID NO:9), Figure 6 (SEQ ID NO:11), Figure 8 (SEQ ID NO:16), Figure 10 (SEQ ID NO:18), Figure 12 (SEQ ID NO:23), Figure 14 (SEQ ID NO:29), Figure 16 (SEQ ID NO:35), Figure 18 (SEQ ID NO:40), Figure 20 (SEQ ID NO:45), Figure 22 (SEQ ID NO:50), Figure 24 (SEQ ID NO:52), Figure 26 (SEQ ID NO:57), Figure 28 (SEQ ID NO:59), Figure 30 (SEQ ID NO:61), Figure 32 (SEQ ID NO:63), Figure 34 (SEQ ID NO:65), Figure 36 (SEQ ID NO:67), Figure 38 (SEQ ID NO:72), Figure 40 (SEQ ID NO:74), Figure 42 (SEQ ID NO:76), Figure 44 (SEQ ID NO:78) or Figure 46 (SEQ ID NO:80), lacking its associated signal peptide.

22. (Currently Amended) An isolated polypeptide having at least 80% amino acid sequence identity to:

(a) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation;

(b) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation; or

(c) ~~the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2);~~

(d) ~~the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide~~; or

(e)(c) the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 203581, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation.

Appl. No. : 09/931,836  
Filed : August 16, 2001

23. (Currently Amended) The isolated polypeptide of Claim 22 having at least 85% amino acid sequence identity to:

- (a) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation;
- (b) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation; or
- (c) the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2);
- (d) the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide; or
- (e)(c) the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 203581, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation.

24. (Currently Amended) The isolated polypeptide of Claim 22 having at least 90% amino acid sequence identity to:

- (a) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation;
- (b) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation; or
- (c) the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2);
- (d) the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide; or
- (e)(c) the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 203581, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation.

Appl. No. : 09/931,836  
Filed : August 16, 2001

25. (Previously Added) The isolated polypeptide of Claim 22 having at least 95% amino acid sequence identity to:

- (a) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation;
- (b) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation; or
- (c) ~~the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2);~~
- (d) ~~the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide; or~~
- (e)(c) the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 203581, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation.

26. (Currently Amended) The isolated polypeptide of Claim 22 having at least 99% amino acid sequence identity to:

- (a) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation;
- (b) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation; or
- (c) ~~the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2);~~
- (d) ~~the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide; or~~
- (e)(c) the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 203581, wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation.

Appl. No. : 09/931,836  
Filed : August 16, 2001

27. (Currently Amended) An isolated polypeptide comprising:
- (a) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2);
  - (b) the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide; or
  - ~~(c) the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2);~~
  - ~~(d) the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide; or~~
  - ~~(e)(c) the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 203581.~~
28. (Currently Amended) The isolated polypeptide of Claim 27 comprising the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2).
29. (Currently Amended) The isolated polypeptide of Claim 27 comprising the amino acid sequence of the polypeptide having the sequence of shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide.
30. (Cancelled) The isolated polypeptide of Claim 27 comprising the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2).
31. (Cancelled) The isolated polypeptide of Claim 27 comprising the amino acid sequence of the extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:2), lacking its associated signal peptide.
32. (Previously Added) The isolated polypeptide of Claim 27 comprising the amino acid sequence of the polypeptide encoded by the full-length coding sequence of the cDNA deposited under ATCC accession number 203581.
33. (Previously Added) A chimeric polypeptide comprising a polypeptide according to Claim 22 fused to a heterologous polypeptide.
34. (Previously Added) The chimeric polypeptide of Claim 33, wherein said heterologous polypeptide is an epitope tag or an Fc region of an immunoglobulin.